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AUTHOR Galvin, Kevin
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ABSTRACT

A study was conducted to determine the relationships between student completion and time of day the class is offered, the content of the class, size of the class, grading procedure, and background of the teacher. A 17-item questionnaire was prepared for instructors of all daytime graded classes. Response rate was 89%. Results showed that student completion was not affected by the time of day, the content, the grading procedure, or the background of the teacher. Student completion was affected by the size of the class. Small classes (0-20) had significantly lower completion ratios. Completion ratios for classes of 20-30, 30-40, or over 40 did not vary from the average. A large majority of the faculty expressed the belief that student completion is affected by the ability and motivation of the students. A copy of the questionnaire and faculty remarks are appended. (KM)

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A STUDY OF INSTRUCTIONAL VARIABLES AND STUDENT COMPLETION

Southwestern College
900 Otay Lakes Road
Chula Vista, California

Prepared by The Research Office
Kevin Galvin, Coordinator of Research
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JC 730 145

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1. Purpose of this Study: This research study is exploratory in nature and seeks to determine what relationships exist between selected instructional variables and student completion. Specifically, this study attempts to answer the following questions:

   I. Is student completion affected by the time of day that a class is offered?

   II. Is student completion affected by the content of the class?

   III. Is student completion affected by the size of the class?

   IV. Is student completion affected by the grading procedure used in the class?

   V. Is student completion affected by the background of the teacher?

2. Importance of this Study: As a result of this study we should succeed in isolating those instructional variables which relate to student completion. Moreover, since we are in a position to control some of these variables we should be able to develop testable hypotheses and programs for increasing student completion at Southwestern College.

3. Design of the Study: A 17-question questionnaire (APPENDIX A) was prepared for each day graded class offered in the Fall 1972. The completion ratio for that class was calculated and the instructor of that class was asked to complete all of the questions on the questionnaire as they related to that particular class. For purposes of this study the completion ratio was calculated as follows:

$$\frac{\text{number of A's + B's + C's + D's + Cr's}}{\text{CENSUS DATE ENROLLMENT}}$$

   Of the 740 graded day courses offered in the Fall 1972 completed questionnaires were received for 660 classes: a return ratio of 89%. This is an exceptionally high rate of response and probably reflects the faculty's great interest in the problems which prompted this study.

4. Results of the Study: Since we knew the completion ratio for all day graded classes, a program was written which would compare the completion ratio for each of the 31 choices offered

by the questionnaire with the completion ratio in all day classes. Thus it was possible to compare the completion ratio for morning, mid-morning, and afternoon classes (see Question A of the questionnaire in APPENDIX A) with the ratio for all classes. To determine if the difference between ratios was significant a "z" score was calculated. Briefly, a z score takes into consideration the fact that our two completion ratios are based on different size samples. For example, our completion ratio for all day classes was based on 720 day classes while our completion ratio for morning classes was based on responses from 269 classes which were identified by the instructor teaching that class as having been offered at 8 AM, 9 AM or 10 AM. For each choice offered by the questionnaire the computer "read in" each choice made by that instructor and then "read in" the number of students enrolled on census date and the number of students successfully completing that class. This enrollment data was taken from the official class register for Fall semester, 1972. While students who received a "No Credit" grade might also be said to have completed the class, for the pruposes of this study, they were treated as non-completers.

IS STUDENT COMPLETION AFFECTED BY THE TIME OF DAY THAT A CLASS IS OFFERED?

In order to answer this question, the following question was posed:

A. What time was the class offered:
    1. 8, 9, or 10 (morning)
    2. 11 AM or 12 PM (mid-morning)
    3. 1 PM, 2 PM, 3 PM, 4 PM (afternoon)
    4. 6:30 PM or Saturday (evening)

Table A graphically presents the obtained results.

TABLE A

Choice	Number of Responses	Completion Ratio	Completion Ratio-Day Classes	Difference Between Completion Ratios	z Score**
A-1	269	70.20	70.10	+.10	.03
A-2	131	70.82	70.10	+.72	.16
A-3	161	70.21	70.10	+.11	.02
A-4	21	62.50	70.10	-7.6	.71
A-0*	78	64.89	70.10	-5.21	not computed

*A-0 = There were 78 questionnaires in which question A was not answered.

**Significance at the 95% confidence level requires a z score of 1.96 or larger.

Thus, the results of this research indicate that student completion is not affected by the time of day that a class is offered. However, it might be the case that the discriminations made by this survey were too gross. Morning was defined as a 3 hour block from 8 AM to 11 AM. Perhaps a finer breakdown into 8 AM classes as one choice, 9 AM classes as a second choice, etc. might have uncovered a relationship between student completion and the time of day that a class was offered. Research is presently being conducted to test this possibility.

A more likely explanation of the obtained results can be found in the claim that census week is the fourth week of the semester and students not interested in attending a morning, mid-morning or afternoon class have already made a change of schedule and any later withdrawal from class is not related to the time the class was offered. In support of this viewpoint it was remarkable that at the end of the questionnaire when the faculty were asked: "After teaching this class I feel that student completion was related to _____ _____ _____", very few faculty members suggested that time of day was a factor.

IS STUDENT COMPLETION AFFECTED BY THE CONTENT OF THE CLASS?

In order to answer this question, the following questions were posed:

B. This class is best described as:
   1. Scientific
   2. Humanistic
   3. Skill Development
   4. Artistic (appreciation)

E. This class could be characterized as:
   1. Introductory
   2. Advanced
   3. For subject majors
   4. Class was (or should be) Adult Ungraded

G. This class emphasized:
   1. Oral performance
   2. Written performance
   3. Both oral and written performance
   4. Neither oral nor written performance

Table 5 summarizes the results.

TABLE B

Choice	Number of Responses	Completion Ratio	Completion Ratio-Day Classes	Difference Between Completion Ratios	z Score**
B-1	94	72.63	70.10	+2.53	.52
B-2	162	74.11	70.10	+4.01	1.05
B-3	292	67.37	70.10	-2.73	.85
B-4	35	68.72	70.10	-1.72	.17
B-0*	77	65.44	70.10	-4.66	not computed
E-1	356	69.70	70.10	- .4	.14
E-2	110	69.68	70.10	- .42	.09
E-3	101	73.08	70.10	+2.98	.63
E-4	16	67.88	70.10	+2.22	.19
E-0*	77	65.71	70.10	-4.39	not computed
G-1	18	77.00	70.10	+6.9	.69
G-2	173	67.74	70.10	-2.36	.60
G-3	242	72.39	70.10	+2.29	.69
G-4	143	68.79	70.10	-1.31	.31
G-0*	84	66.43	70.10	-3.67	not computed

*B-0 = There were 77 questionnaires in which question B was not answered.

*E-0 = There were 77 questionnaires in which question E was not answered.

*G-0 = There were 84 questionnaires in which question G was not answered.

**Significance at the 95% confidence level requires a z score of 1.96 or larger.

Thus, the results of this research indicate that student completion is not affected by the "content" of the class. Most instructors characterized their classes as skill development, (N=292), introductory in nature (N=356) and emphasizing both oral and written performance (N=242). Rarely did instructors feel that their classes could be described as artistic (appreciation) (N=35) or designed as an adult ungraded (N=16) or emphasizing oral performance (N=18). In all cases the instructor made the determination as to which of the available choices best described the class.

IS STUDENT COMPLETION AFFECTED BY THE SIZE OF THE CLASS?

In order to answer this question, the following question was posed:

C. This class had approximately:

1. 0-20 students
2. 21-30 students
3. 30-40 students
4. 40+ students

The results are presented in Table C.

TABLE C

Choice	Number of Responses	Completion Ratio	Completion Ratio-Day Classes	Difference Between Completion Ratios	z Score**
C-1	195	65.97	70.10	-4.13	5.65***
C-2	160	71.10	70.10	+1.00	.02
C-3	151	71.35	70.10	+1.25	.94
C-4	65	71.34	70.10	+1.24	.21
C-0*	89	65.82	70.10	-4.25	not computed

*C-0 = There were 89 questionnaires in which question C was not answered.

**Significance at the 95% confidence level requires a z score of 1.96 or larger.

***These results are significant beyond the 99% confidence level.

Thus, the results of this research indicate that student completion is affected by class size. For 195 classes characterized as small (0-20 students) student completion was significantly lower than in day classes overall. That this result could not be obtained by chance alone is guaranteed by a z score of 5.65--well beyond the 99% confidence level.

Interestingly, classes of 20-30 or 30-40 or over 40 students did not have completion ratios which varied from the overall average. For many observers this result is at variance with their felt intuitions regarding class size and student success. Recent educational research however has continually failed to find any strong correlation between class size and student learning or student success. Chrisp & Aven in their study on mathematics instruction in college found no significant correlation between class size and student learning, while Hoover, in his study, found that instructor's attitude was more important to student success than class size. Nevertheless, our finding that small classes have a lower completion ratio requires some explanation. One possibility is that small classes require greater participation from the student and that many students withdraw rather than participate. Another possibility is that small classes have some other characteristic in common--(e.g., advanced subject matter) and it is a combination of these factors which cause this lower completion rate. Obviously additional research will be required to resolve this issue.

IS STUDENT COMPLETION AFFECTED BY THE GRADING PROCEDURE USED IN THE CLASS?

In order to answer this question, the following questions were posed:

H. My final exam was primarily:
   1. Short objective questions
   2. Essay questions
   3. Other, explain_____

I. The students' grade was determined by:
   1. Frequent equally weighted exams
   2. Exams or papers corrected primarily in the last 3 weeks.

J. My grading policy required:
   1. Work done primarily out of class (papers, projects, etc.)
   2. Work done primarily in class (exams, etc.)
   3. Both

K. My grading procedure emphasized:
   1. Lecture materials
   2. The textbook
   3. Other assignments

The results are presented in Table D.

TABLE D

Choice	Number of Responses	Completion Ratio	Completion Ratio-Day Classes	Difference Between Completion Ratios	z Score**
H-1	214	70.09	70.10	- .01	.00
H-2	60	70.39	70.10	+ .29	.05
H-3	221	69.80	70.10	- .30	.09
H-0*	165	69.00	70.10	-1.10	not computed
I-1	375	70.47	70.10	+ .37	.13
I-2	53	69.75	70.10	- .35	.19
I-0*	232	68.29	70.10	-1.81	not computed
J-1	62	72.25	70.10	+2.15	.36
J-2	228	70.61	70.10	+ .51	.15
J-3	251	69.24	70.10	- .86	.26
J-0*	119	67.86	70.10	-2.24	not computed
K-1	187	73.39	70.10	+3.29	.66
K-2	164	65.60	70.10	-4.5	1.11
K-3	169	69.78	70.10	- .32	.08
K-0*	140	66.57	70.10	-3.53	not computed

*H-0 = There were 165 questionnaires in which question H was not answered.

*I-0 = There were 232 questionnaires in which question I was not answered.

*J-0 = There were 119 questionnaires in which question J was not answered.

*K-0 = There were 140 questionnaires in which question K was not answered.

**Significance at the 95% confidence level requires a z score of 1.96 or larger.

Thus, the results of this research indicate that student completion is not affected by the grading procedures used in the class. Most instructors reported that they used frequent equally weighted exams (N=375). Faculty were about equally divided in using a grading procedure which emphasized lecture materials (N=187), the textbook (N=164), and other assignments (N=169). Only rarely did instructors indicate that their final exam emphasized essay questions (N=60) or that the student's grade was determined in the last 3 weeks (N=53) or that their grading policy required work done primarily out of class, i.e., papers, projects, etc. (N=62).

Of interest was the fact that large numbers of those responding to the questionnaire failed to answer question I (N=232):

I. The students' grade was determined by:
   1. Frequent equally weighted exams
   2. Exams or papers corrected primarily in the last 3 weeks

This result seems to indicate a deficiency in the way the question was asked. (Question I is the only question in the survey which presents only two choices--most questions allow the respondent four choices.) Question H:

H. My final exam was primarily:
   1. Short objective questions
   2. Essay questions
   3. Other, explain_____

also had a high rate of no response (N=165) and in light of the large number of faculty who chose H-3 this seems to indicate that final exams can not be characterized as simply short objective questions or essay questions.

Choice K-2 characterized 164 day classes and achieved a z score of 1.11 which is fairly high (at the 85% confidence level) and seems to indicate that those classes in which the grading procedure emphasized the textbook had a lower completion ratio. Again, additional research will be required to interpret this result.

IS STUDENT COMPLETION AFFECTED BY THE BACKGROUND OF THE TEACHER?

In order to answer this question, the following questions were posed:

L. My sex is: 1. Male
              2. Female

M. My age is:
   1. 0-30
   2. 31-40
   3. 41-50
   4. 50+

N. My teaching experience is:
   1. 1st year
   2. 2-4 years
   3. 5-10 years
   4. 10+ years

O. I have taught <u>this</u> course for:
   1. 1st time
   2. 2-4 times
   3. 5 or more times

P. This class represents:
   1. Part of my full time teaching load
   2. A part time teaching assignment
   3. An over load teaching assignment

Table E summarizes the results of these questions.

TABLE E

Choice	Number of Responses	Completion Ratio	Completion Ratio-Day Classes	Difference Between Completion Ratios	z Score
L-1	418	69.84	70.10	- .26	.42
L-2	128	72.57	70.10	+ .25	.58
L-0*	114	65.18	70.10	-4.92	not computed
M-1	110	70.61	70.10	+ .51	.11
M-2	155	68.68	70.10	-1.42	.35
M-3	207	71.41	70.10	+1.31	.37
M-4	72	70.98	70.10	+ .88	.16
M-0*	116	65.79	70.10	-4.31	not computed
N-1	37	73.29	70.10	+3.19	.43
N-2	128	68.48	70.10	-1.62	.37
N-3	151	71.19	70.10	+1.09	.27
N-4	249	70.11	70.10	+ .01	.00
N-0*	95	65.70	70.10	-4.40	not computed
O-1	72	71.66	70.10	+1.56	.28
O-2	192	68.81	70.10	-1.29	.59
O-3	295	70.70	70.10	+ .60	.19
O-0*	101	66.67	70.10	-3.43	not computed
P-1	485	70.34	70.10	+ .24	.09
P-2	66	71.42	70.10	+1.32	.23
P-3	7	58.37	70.10	-11.17	.62
P-0*	102	65.73	70.10	-4.37	not computed

*L-0 = There were 114 questionnaires in which question L was not answered.

*M-0 = There were 116 questionnaires in which question M was not answered.

*N-0 = There were 95 questionnaires in which question N was not answered.

*O-0 = There were 101 questionnaires in which question O was not answered.

*P-0 = There were 102 questionnaires in which question P was not answered.

**Significance at the 95% confidence level requires a z score of 1.96 or larger.

Thus, the results of this research indicate that student completion is not affected by the background of the teacher. For the purposes of this study "the background of the teacher" was defined in terms of the age, sex, and teaching experience of instructor. No attempt was made to measure teacher attitudes toward their subject matter, students or teaching. Likewise no attempt was made to correlate instructor personality with student completion. These factors were well outside the scope of this study.

The profile of the Southwestern instructor which emerges from this study is of a fairly young individual with extensive teaching experience and great familiarity with his subject matter.

In short the teacher at Southwestern is a professional and for this reason the final question of this questionnaire asked the instructor to suggest what factor(s) he feels is most directly related to student completion. Most faculty members took this opportunity to present their views. These opinions have been subdivided into 7 categories: time of class, content, size of class, grading procedure, teacher background, student motivation and ability, and miscellaneous. Overwhelmingly the faculty suggests that student completion is related to student motivation and ability. The suggestions of the faculty on this issue are reproduced in Appendix B.

Summary:

As a result of this research project the following conclusions were advanced:

1) Student completion is not affected by the time of day that that a class is offered.

2) Student completion is not affected by the content of the class.

3) Student completion is affected by the size of the class. Small classes (0-20 students) had significantly lower completion ratios. Classes of from 20-30 students or 30-40 students or over 40 students did not differ greatly in terms of completion ratios when compared with all day classes. Additional research has been suggested to determine those factors which small classes have in common which might affect their completion ratios.

4) Student completion is not affected by the grading procedure used in the class.

5) Student completion is <u>not</u> affected by the background of the teacher.

6) The overwhelming majority of the faculty expressed the belief that student completion is affected by the ability and motivation of the students.

APPENDIX A

INSTRUCTIONAL VARIABLES AND STUDENT COMPLETION

This research project seeks to determine what relationship exists between various instructional variable and student completion. Please complete this questionnaire by writing in the circle on the right the number which best answers each question.

Class _____

Beginning enrollment:

Students Completing:

A. What time was the class offered:
   1. 8, 9, or 10 (morning)
   2. 11 AM or 12 PM (mid-morning)
   3. 1 PM, 2 PM, 3 PM, 4 PM (afternoon)
   4. 6:30 PM or Saturday (evening)

B. This class is best described as:
   1. Scientific.
   2. Humanistic.
   3. Skill Development.
   4. Artistic (appreciation).

C. This class had approximately:
   1. 0-20 students.
   2. 21-30 students.
   3. 30-40 students.
   4. 40+ students.

D. This class was held:
   1. On Campus.
   2. Off Campus.

E. This class could be characterized as:
   1. Introductory.
   2. Advanced.
   3. For subject majors.
   4. Class was (or should be) Adult Ungraded.

F. Attendance requirement of this class:
   1. Regular attendance was mandatory.
   2. Regular attendance was non-mandatory.

G. This class emphasized:
   1. Oral performance.
   2. Written performance.
   3. Both oral and written performance.
   4. Neither oral nor written performance.

(Over)

H. My final exam was primarily:
   1. Short objective questions.
   2. Essay questions.
   3. Other, explain_____

I. The students' grade was determined by:
   1. Frequent equally weighted exams.
   2. Exams or papers corrected primarily in the last 3 weeks.

J. My grading policy required:
   1. Work done primarily out of class (papers, projects, etc.).
   2. Work done primarily in class (exams, etc.).
   3. Both

K. My grading procedure emphasized:
   1. Lecture materials .
   2. The textbook.
   3. Other assignments.

L. My sex is: 1. Male
   2. Female

M. My age is:
   1. 0-30.
   2. 31-40.
   3. 41-50.
   4. 50+

N. My teaching experience is:
   1. 1st year.
   2. 2-4 years.
   3. 5-10 years.
   4. 10+ years.

O. I have taught <u>this</u> course for:
   1. 1st time.
   2. 2-4 times.
   3. 5 or more times

P. This class represents:
   1. Part of my full time teaching load.
   2. A part time teaching assignment.
   3. An over load teaching assignment.

Q. After teaching this class I feel that student completion was related to:_____

_____

_____

APPENDIX B

1. Time of Class

Ability to show up at 8 AM daily--ON TIME

Lost several students who dropped because class was too late for them to get to work on time. Some transferred during the first 2 weeks to earlier hours so they could work.

Time of day, dislike of English, lack of interest in English grammar.

Amount of homework necessary too time consuming for many. Saturday morning rough for attendance.

Good time for class. Students willing to participate and work.

Time class was offered.

2. Content of Class

Students identified with material and instructor--speech curriculum has been changed to reflect the times.

Content of the course and a requirement for Business majors.

The unfamiliar (and difficult) nature of the material presented.

The activity was enjoyable.

The activity was something they wanted to learn how to do or play.

Basic challenging nature of the class--ease of learning and performing skills by all levels of athletic types.

Easy class. Perseverance by both teacher and students. Good time for class.

Total physical and mental approach to physical fitness.

The remedial student's aversion to practice grammatical exercises (boring and difficult for them).

Variety of materials presented in order to succeed in college. I would like to think it was presented with enthusiasm and empathy on the part of the instructor.

This is a class the students usually love. The ones who dropped were primarily ones with job conflicts or ones who withdrew from school totally.

3. Size of Class

Finding the class more physically involved than they thought.

Classes are too large for a skill class. Also, many bi-lingual come into the class without adequate English language skills. Many students drop out to go to work.

4. Grading Procedure

To some extent passing the course (most lower grades dropped). It is a requirement. It is an interesting subject and I occasionally do not bore them to death.

Attendance in class and performance of outside assignments.

Some students dropped when they were required to complete assignments or were absent too many times.

Completing all the assignments.

Attendance requirement.

Fact that all work was done in class on business machines.

The student's success ratio in the course.

Students felt class was mandatory.

I expect a student to perform or drop.

5. Teacher Background

My teaching skills, the students' interest in the materials and their share of responsibility for assigned materials which were not immediately and apparently of interest to them.

My good leadership.

Me--keeping them interested to stay.

Adaptation of course to student's need.

My system as developed in teaching this class many times during the past 10 years.

Hopefully integrating both instructional and student needs.

6. Student Ability and Motivation

Reluctance to write papers.

Student effort.

Interest, hard work, ability to read and write.

Amount of work experience in the field (more experience correlated to more motivation for improving teaching skills).

Having a sufficient preparation to handle this course. A more dynamic presentation and vocationally related experiences.

Scares on first two exams.

Ability to deal successfully with the material.

Student's major--all interested in the subject material--rather small informal group.

Required daily attendance and daily study--some students did not want to work.

Their desire to learn a new and different skill.

Success in related work experience.

The desire of the student to succeed in improving his reading skill--because he felt no threat of failure.

A more complete understanding of speech composition and performance.

Amount of time that the student had to study, ability to learn, technique of instructor.

A good background in previous courses and an ability to work with abstraction.

Their desire to improve their physical shape.

Interest in the subject combined with efficient study habits.

Effective study habits--pressure of employment--membership on the football team.

Individual initiative.

Interest, motivation and aptitude.

Student practice effort.

The individual student's honesty in identifying his communication abilities.

Interest, goals, ability to identify with future career, willingness to learn material, and perform basic evaluation of complex electrical equipment.

Motivated by computer.

Course is required for some majors; student interest in group project.

Course transferable and required for a four year college.

The combination of courses that they were lacking during the semester.

Student commitment to work at an even rate throughout the course. Also attendance and doing the assignments are necessary.

Wanting to learn to swim-Self motivation for water safety.

Students were all adults interested in subject.

Unpreparedness of students. Some belonged in English 21. Suggest placement test. Early morning class.

Students should have been counseled into taking an introductory or intermediate course instead of the most advanced algebra course.

Student preparation for college work.

Interest in material--or GI bill.

Being truly interested in becoming a teacher of young children.

Relevance of subject matter to student's life.

Achievement of course is a requirement for some Business major.

Desire for information.

Students effort (i.e. time and thought spent on daily required assignments). Students and mathematical background and time lapse since last course taken. Attitude. Student's have a limited aptitude in mathematics and hence are somewhat "frightened" it's a requirement for their major.

UNIVERSITY OF CALIF.
LOS ANGELES

JUL 13 1973

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